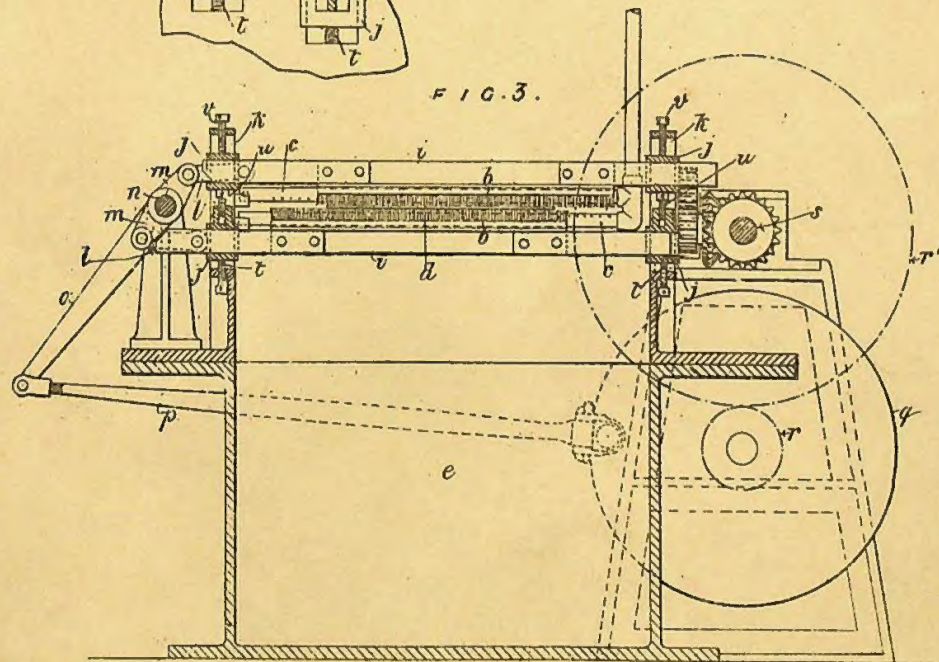
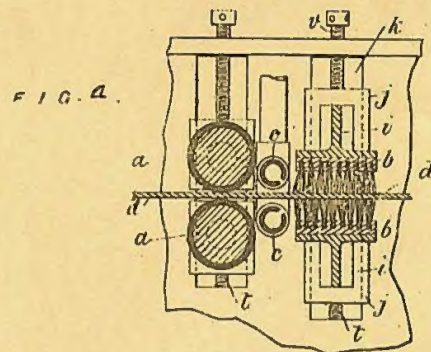


A.D. 1889. Nov. 7. No. 17,744.
 WILSON'S COMPLETE SPECIFICATION.
 [Reprint.]



1889-17744
 British No. 17,744
 Jan. 7, 1889

451-103

AU 3203

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GB 000017744 A
 OCT 1890

N° 17,744



A.D. 1889

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Date of Application, 7th Nov., 1889

Complete Specification Left, 6th Sept., 1890—Accepted, 11th Oct., 1890

PROVISIONAL SPECIFICATION.

Improvements in Machinery for Cleaning Glass Plates or Sheets.

I WILLIAM JOHN WILSON of 6 Malden Road, Watford, Herts., Chemist do hereby declare the nature of this invention to be as follows:—

To carry out my invention I use rollers made of metal or other suitable rigid substance and coated with a softer elastic material such as vulcanized india rubber.

- 5 These rollers are arranged in pairs one roller over the other and caused to revolve in such a way that a plate of glass placed between them is gripped and carried forward in a horizontal plane. Before the plate has entirely passed through, its front edge is gripped by another pair of rollers which continue its motion forwards and successive pairs of rollers are arranged so as to carry the plate onwards as far as may be necessary. As the glass passes along its upper and under surfaces are both brushed by pairs of brushes moving between successive pairs of rollers. The brushes have a rapid oscillatory motion in a horizontal plane and in a direction at right angles to that in which the glass is moving.

- 15 The brushes and glass are kept wet by suitably arranged jets of water or other cleansing fluid and the cleaned glass may be delivered by the machine either in a wet state or dried by passing between dry rollers or pads or squeegees. The brushes or some of them may be replaced by pads of leather, sponge, felt or other suitable material and a dry powder may be supplied to them instead of the liquid so that the glass is polished dry instead of or after being washed.

- 20 Dated this 7th day of November 1889.

WM. J. WILSON.

COMPLETE SPECIFICATION.

Improvements in Machinery for Cleaning Glass Plates or Sheets.

- I, WILLIAM JOHN WILSON of 6, Malden Road, Watford, Herts., do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- My invention relates to machinery for cleaning glass plates for photographic purposes, and it consists essentially in the employment of successive pairs of transversely reciprocating brushes acting on opposite sides of the plates in a direction at right angles to their line of motion, in combination with successive pairs of rollers by which the plates are supported and fed forward between the brushes, the pairs of rollers being arranged alternately with the brushes.

- The invention further comprises successive pairs of jet tubes by which the scouring and rinsing liquids are sprayed on the upper and under surfaces of the plates.

- 35 The arrangement and operation of the brushes, rollers, and other adjuncts, is illustrated in the accompanying drawings, forming part of this specification, to which reference must be had and wherein Figure 1 is a longitudinal vertical section, Figure 2 a plan, and Figure 3 a cross-section (on a larger scale) of the improved plate-washing machine. Figure 4 is a detail cross-section of one set of rollers, pipes, and brushes. The same letters of reference indicate like parts in all the figures.

- 40 In Figure 4, *a a* are a pair of rubber-covered rollers, *b b* a pair of brushes, and *c c* a pair of jet pipes, constituting one of the successive sets of apparatus of which the machine is composed. The rollers are mounted one above the other, grip the plate *d* between them, and feed it forward between the jet tubes and brushes. The jet pipes have their orifices so arranged as to direct the jets upon the upper and under surfaces of the plates as they are about to pass between the brushes.

[Price 6d.]

Wilson's Improvements in Machinery for Cleaning Glass Plates or Sheets.

A number of these sets of apparatus are mounted over a tank *e*, as shewn in Figures 1 and 2, at a pitch or distance apart less than the breadth of the smallest size of plate to be operated on, so that every plate of the series will be always gripped, preferably, by two pairs, and never by less than one pair, of rollers. *f* is the feed table upon which the plates are laid and pushed forward by hand to the first set of rollers, and *g* is the table upon which they are delivered by the machine, after passing through the whole series. The tank is divided by a transverse partition into two compartments, the sets of apparatus over the first or larger compartment being for scouring or washing and those over the smaller or second compartment for rinsing the plates, the sets of jet tubes over the larger compartment being supplied with an alkaline solution, supplied through a main *U*, and those over the lesser compartment with plain water. Pairs of india-rubber squeegees *h* are provided, between which the plates pass on their exit from each set of apparatus, for returning the surplus liquid to the tank.

The brushes *b b* of each pair are carried by bars *i* mounted in guide boxes *j* fitted in vertical guides *k* mounted on the sides of the tank, the lower boxes being supported by adjusting screws *l* by which the acting faces of the lower brushes are adjusted all in the same horizontal plane, the guide boxes of the upper brushes being similarly fitted in their guides and adjusted by distance and pressure screws *u, v*, so that the brushes act upon the surfaces of the glass plates with sufficient pressure, being so set that the bristles of the upper and lower brushes just touch when there is no glass between them. The two brushes of each pair are connected, by short links *l*, with opposite arms *m m* of a rock lever so that the two brushes reciprocate in opposite directions, which is preferred in order to avoid any tendency to displace the plates laterally. The two brushes might however be arranged to move in the same direction but with less advantage for the reason mentioned. The rock lever is mounted on a shaft *n* common to all the sets of brushes and actuated through a lever *o* and connecting rod *p* from a crank disc *q* driven at a high speed through wheel and pinion *r r'* from the shaft *s*. The pairs of rollers *a a* are mounted in journal boxes in the same way as the brushes, the upper side of the lower rollers being all adjusted accurately on a level with the working face of the lower brushes and the upper rollers being spring pressed to increase their grip. They are driven by sets of bevel gear from the shaft *s* common to all.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is ;—

1. In a machine for cleaning glass plates, the combination, with successive pairs of feed rollers, of pairs of transversely-reciprocating brushes arranged between the pairs of rollers and adapted to act on both surfaces of the plates, as described.
2. In a machine for cleaning glass plates, the combination, with successive pairs of feed rollers and with pairs of transversely-reciprocating brushes arranged between the pairs of rollers for operation on both surfaces of the plates, of pairs of jet pipes adapted to direct the jets of liquid upon the surfaces of the plates as they pass between the brushes, substantially as specified.
3. The herein described plate-washing machine, constructed for operation substantially as described and illustrated in the drawings.

Dated this 6th day of September 1890.

W. J. WILSON.

By A. M. & Wm. Clark,
53, Chancery Lane, London, Patent Agents.